

United States
Department of
Agriculture

Forest
Service

Arizona Zone
Entomology &
Pathology

2500 S. Pineknoll Dr.
Flagstaff, AZ 86001

File Code: 3400
Route To:

Date: May 20, 1997

Subject: Pinyon Mortality on Mormon Lake Ranger District South of
Twin Arrows

To: Dick Stephens, Timber Staff

This letter is a follow-up to the trip that Jill Wilson, Entomologist AZZ Entomology and Pathology, and I took with you and Ken Broyles on March 28, 1997. We looked at an extensive area of pinyon mortality about 6 miles south of Twin Arrows. The mortality was caused by pinyon ips (Ips confusus).

Pinyon ips is a small, cylindrically-shaped, brown beetle with distinctive spines on the posterior edge of the wing coverings. From November to March, adults overwinter in groups, under the bark and near the base of standing trees. In April, the adults will fly and seek out suitable breeding habitat. Successive generations develop between April and October. Three to four generations can be produced annually under the right conditions. Outbreaks are common and can develop quickly following operations that injure or uproot trees. We believe that this past year's severe drought, predisposed pinyon pine to attack by this beetle. Pinyon ips is native to the southwest and can cause extensive mortality in pinyon pine during outbreaks.

In mid-April, an early aerial detection survey flight was conducted by Steve Dudley. The area in question was mapped and the outbreak area was estimated at 8,700 acres. A map has been included with this letter for your use.

We are cooperating with Jose Negron, Research Entomologist, Rocky Mountain Research Station, to conduct a more thorough evaluation of this area. We will be looking at factors that affect likelihood of infestation, both on an individual tree and a plot basis. Some of the variables we will be looking at will include those associated with tree condition (size, crown, distance to nearest infested tree etc) and some with plot conditions (basal area, trees per acre, etc.). We are also looking gathering some basic biological information on the insect, such as the number of generations produced per year. We are in the process of establishing semi permanent monitoring transects (10 chains by 1 chain) for the latter now. These will be checked periodically throughout the summer. The transects are marked with blue and pink flagging and are located at half mile intervals along Forest Road 126. Currently infested trees are marked with orange paint at the base.

If you would like additional information or assistance, I can be contacted at (520) 556-2072. Jill can be reached at (520) 556-2074.

A handwritten signature in black ink, appearing to read "Michelle S. Frank". The signature is fluid and cursive, with the first name "Michelle" being more prominent than the last name "Frank".

Michelle S. Frank
Entomologist
Arizona Zone, Entomology and Pathology

cc: M.Larson:R03A
FMROSTAFF:R03A
FOR:R03A
D.Parker:R03A
D.Allen-Reid:R03A
J.Wilson:S28L02A

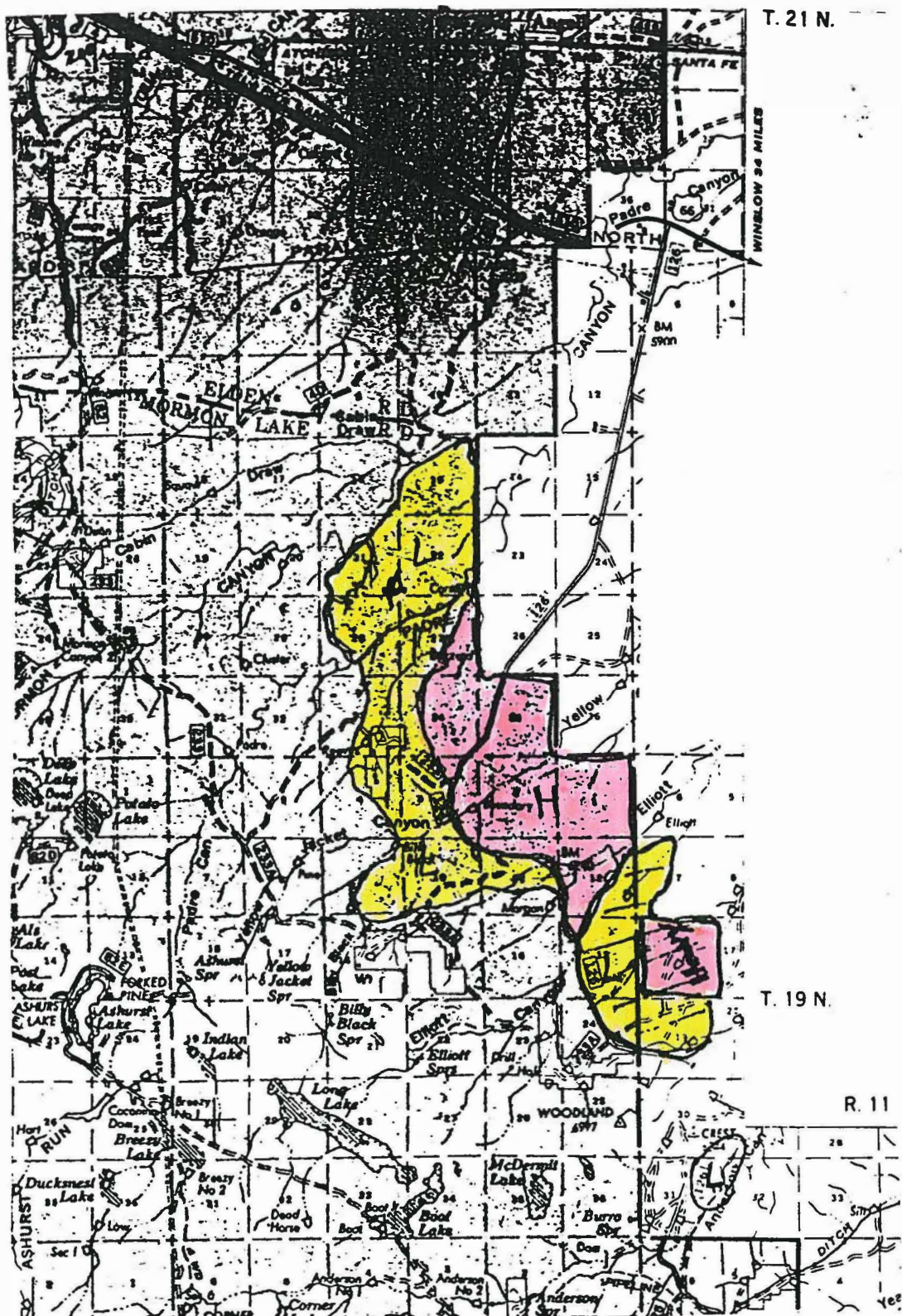


Figure 1. Aerial survey map depicting area of concentrated pinyon pine mortality, (pink: heaviest mortality and yellow: scattered mortality). Mormon Lake Ranger District 1997.